

Stakeholder Decision Elements

City of Asheville Stormwater Ordinance Revisions

Decision Element No.	Decision Element Description	Ordinance Section	Requirements	Impacts/ Comments										
1	“During-Construction” Soil Erosion and Sediment Control – Buffer Zone	<p>Existing Asheville Soil Erosion and Sedimentation Control (SESC) Ordinance: 7-12-2.E.1. Buffer Zone around Water Bodies [p.12]</p> <p>Draft Ordinance: IV.b.(v.)(a) Mandatory Standards for Land Disturbing Activities: 1. Buffer Zone [p. 27]</p>	<p>Existing Asheville Ordinance: State requirement of 25% of buffer zone nearest land disturbing activity for non-trout waters. Minimum of 25-ft. for trout waters or 25% if more restrictive.</p> <p>Draft Ordinance: Same as existing Asheville Ordinance.</p> <p>OPTIONS:</p> <p>1. Leave as is.</p> <p>2. Apply the 25-ft. set back from top of bank as a minimum for all jurisdictional waters, not just trout waters.</p> <p>3. Apply 50-ft. minimum for all jurisdictional waters as measured from top of bank.</p> <p>4. Adopt states guidance for determining buffer width as rule and combine with one of the options above.</p> <p>State guidance for Buffers based on natural slope from top of bank through buffer zone.</p> <table><tr><td>Slope %</td><td>Buffer Width</td></tr><tr><td>0-1</td><td>15 Feet</td></tr><tr><td>1-3</td><td>20 Feet</td></tr><tr><td>3-5</td><td>25 Feet</td></tr><tr><td>>5</td><td>25 Feet + (%slope – 5)</td></tr></table>	Slope %	Buffer Width	0-1	15 Feet	1-3	20 Feet	3-5	25 Feet	>5	25 Feet + (%slope – 5)	<ul style="list-style-type: none">• Calculation and application of 25% rule is difficult.• Buffers reduce area for development• Buffers protect floodway and floodplain and allow for streambank meandering and movement without impact to development.• Buffers provide water quality benefit by removing solids.• Buffers are not susceptible to concentrated flows.• Buffers requires maintenance
Slope %	Buffer Width													
0-1	15 Feet													
1-3	20 Feet													
3-5	25 Feet													
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2	Graded Slopes and Fills	<p>Existing Asheville SESC Ordinance: 7-12-2.E.2. Graded Slopes and Fills [p. 13]</p> <p>Draft Ordinance: (v.) (a.) 2. Graded Slopes and Fills [p. 28]</p>	<p>Existing Asheville Ordinance: <i>Ground Cover for slopes</i> Exposed areas must be planted or otherwise provided with groundcover, devices or structures sufficient to restrain erosion within 15 working days of completion of any phase of grading.</p> <p><i>Certification of Slopes</i> Fill slopes greater than (2:1) and higher than five feet above adjacent grade, and cut slopes steeper (1.5:1) and higher than five feet above adjacent grade, shall be designed by a registered professional, and upon completion shall be certified to be stable by a registered professional engineer or landscape architect. All fill slopes shall be compacted full depth to not less than 95 percent maximum density (Standard Proctor).</p> <p><i>Slope Setback Requirements</i> None</p> <p>Draft Ordinance: <i>Ground Cover for slopes</i> Permanent ground cover to be provided in 15 working days or 30 calendar days; no inspection or certification requirements. <i>Certification of Slopes</i>-None <i>Slope Setback Requirements</i>-None</p> <p>REQUIRED: 1. Per state rule, sufficient ground cover must be provided within 21 calendar days of completion of slope.</p>	<p><i>Ground Cover</i></p> <ul style="list-style-type: none"> • May be hard to track. • Need to be clear about what cease construction means • Provides source protection but still need to maintain sediment control devices. <p><i>Certification</i></p> <ul style="list-style-type: none"> • Adds Expense. • Provides added degree of protection from landslide <p><i>Slope Setback</i></p> <ul style="list-style-type: none"> • Possibly Decreases build area. • Provides protection to adjacent properties from risk of slope failure and drainage issues.

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			<p>OPTIONS:</p> <p>1. No Changes</p> <p>2. Define constructed severe slopes as a constructed slope with a grade of 50% (2:1) or greater.</p> <p>3. Define constructed moderate slopes as a constructed slope with a grade of 25% (4:1) but less than 50%.</p> <hr/> <p>4. Require design, inspection and stability certificate by NC registered professional engineer with geotechnical expertise for constructed severe slopes greater than 8' in height. Stability certificates shall verify slopes compaction and ability to maintain soil and vegetation.</p> <p>5. Require that NC registered professional engineer with geotechnical expertise provide periodic inspections and compaction reports all constructed severe slopes within existing or future public right-of-ways.</p> <p>6. Do not allow slopes with grade greater than 50% (2:1)</p> <hr/> <p>7. Require setback from existing adjacent property and right-of-way lines for retaining walls and constructed moderate and severe slopes as indicated below. The constructed moderate and severe slopes shall include those created for the construction of retaining walls. The setback shall be measured from and applied for both the head of the slope and the toe of the slope.</p> <p>For slopes with a maximum height of 5' or less the setback shall be equal to the maximum height of the slope.</p> <p>For all other slopes the minimum setback shall be the greater of either 5' or the maximum height of the slope minus the slopes horizontal ratio component multiplied by the maximum height of the slope.</p> <p>8. Allow a reduction of the setback as described in # 7 by the City Engineers Office with adequate geotechnical support for the reduction.</p>	

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3	Maximum Allowable Disturbance Area per Phase	<p>Existing Asheville SESC Ordinance: 7-12-2. E.4. Grading of Steep Slopes & 7-12-2.F2 HQW [p. 14 & 15]</p> <p>Draft Ordinance: c.(iii.)(b.)3. Soil Erosion and Sedimentation Control Concept Plan [p. 16&30]</p>	<p>Existing Asheville Ordinance: Plan and conduct activities to limit the size of the areas to be exposed at any one time. Special requirements for steep slopes: grading on residentially zoned property with >15% slope is limited to disturbing < 5 acres at a time. Maximum of 20 Acres in High Quality Water areas.</p> <p>Draft Ordinance: No mandatory limits or requirements on allowable disturbance area. If > 20 acres disturbed at one time, additional requirements for Concept Plan including method of exposure limiting, cut/fill analysis and construction sequence and phasing schedule. [p.16] Maximum of 20 Acres in High Quality Water areas</p> <p>ADD NEW SECTION: Add existing Asheville Ordinance Language regarding 15% slopes to a new Section in the Draft Ordinance at: (v.) (a.) <u>4</u>. Maximum Allowable Disturbance Area Section [p. 28], in front of current item 4. Prior Plan Approval.</p> <p>OPTIONS:</p> <ol style="list-style-type: none"> 1. Leave as is. 2. Add river district overlay zoning to 15% 5 acre rule limit 3. Limit disturbance to 5 acres per phase for all properties within steep slope and ridge top overlay districts. 4. For all property, disturbance limits may exceed 1 acre, only if construction bond or letter of credit is provided. Bond shall be sufficient to re-vegetate disturbed area and must be valid for 1 year from the issuance of the permit and be updated throughout process. 5. Allow City Engineer Office to be more or less restrictive with limits of disturbance. 6. Require "stamped" as-builts of disturbed areas for plans with restrictions on amount of disturbance. 7. Require deed restrictions for disturbance areas within hillside and ridge top subdivisions. 	<ul style="list-style-type: none"> • Reduces risk to City and citizens. • Makes contractor/developer think about how much he should disturb. • May be hard to regulate. • As-builts are good if permittee is given notice upfront that they will be required so inspections can be done. These in the right format could be used to update GIS data.

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4	Ground Cover	<p>Existing Asheville SESC Ordinance: 7-12-2.E.3. Ground Cover & 7-12-2.F2 HQW [p. 14, 15 and 16]</p> <p>Draft Ordinance: (v.)(a.)3. Ground Cover, [p. 28 & 30]</p>	<p>Existing Asheville Ordinance: Limits for ground cover is within 15 working days or 90 calendar days after completion of construction whichever is shorter. In HQW limit is 15 working days or 60 calendar days</p> <p>Draft Ordinance: Limits for permanent ground cover is within 15 working days or 90 calendar days, following completion of construction or development, whichever is shorter. When construction has ceased in a particular area of a tract, then permanent ground cover must be accomplished within 30 working days or 90 calendar days from the date of the last land disturbing activity, whichever is shorter.</p> <p>OPTIONS: 1. Leave as is. 2. Adopt state requirements for ground cover on slopes and fills of 21 calendar days for all ground cover not just slopes and drop working days from all ground cover requirements.</p>	<ul style="list-style-type: none"> • Reduces risk to City and citizens. • Makes contractor/developer think about how much he should disturb. • May be hard to regulate. • Simplifies requirements for contractors and inspectors • Must verify that 21 days is as restrictive as 15 working days through state.

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5	Borrow and Waste Areas	<p>Existing Asheville SESC Ordinance: 7-12-2.I. [p. 19]</p> <p>Draft Ordinance: (v.)(a.)3., [p. 30]</p>	<p>Existing Asheville Ordinance: (i) <i>Borrow and waste areas.</i> When the person conducting the land-disturbing activity is also the person conducting the borrow or waste disposal activity, areas from which borrow is obtained and which are not regulated by the provisions of the North Carolina Mining Act of 1971, and waste areas for surplus materials other than landfills regulated by the North Carolina Department of Environmental, Health, and Natural Resources, Division of Solid Waste Management shall be considered as part of the land-disturbing activity where the borrow material is being used or from which the waste material originated. When the person conducting the land-disturbing activity is not the person obtaining the borrow and/or disposing of the waste, these areas shall be considered a separate land-disturbing activity. The formal plan shall indicate if there will be borrowed or waste fill material used or deposited, where it originated or where it will be deposited, and what erosion control measures will be used to stabilize it.</p> <p>Draft Ordinance: <i>Borrow and waste areas.</i> When the person conducting the land disturbing activity is also the person conducting the borrow or waste disposal activity, the following areas are considered as part of the land disturbing activity: (i) Areas from which borrow is obtained that are not regulated by the provision of the Mining Act of 1971, G.S. 74-46 et se.; or (ii) Waste areas for surplus materials other than landfills regulated by the department's division of solid waste management.</p> <p>OPTIONS:</p> <ol style="list-style-type: none"> 1. Leave as is. 2. Require borrow waste calculations for all formal plans require proof of approved borrow/waste site prior to issuance of permit. 	<ul style="list-style-type: none"> • Difficult to interpret • Difficult to insure waste or borrow sites are properly permitted. • Requires contractor/developer to plan for offsite disturbance needs. • May be hard to regulate. • Simplifies requirements for all to ensure compliance. • May delay start of work if contractor/developer has not planned accordingly.

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6	Design Storms	<p>Existing Asheville SESC Ordinance: Runoff 7-12-2.F.1 [p. 14]</p> <p>Draft Ordinance: (v.)(a).3., Design Storms[p. 29]</p>	<p>Existing Asheville Ordinance: <i>Runoff.</i> Except as provided for in subsection 7-12-2(f)(2)b. of this chapter, erosion and sedimentation control measures, structures, and devices shall be so planned, designed, and constructed as to provide protection from the calculated maximum peak rate of runoff from the ten-year storm. Runoff rates shall be calculated using the procedures in the USDA, Soil Conservation Service's "National Engineering Field Manual for Conservation Practices", or according to procedures adopted by any other agency of this state or the United States, or other acceptable calculation procedures</p> <p>Draft Ordinance: <i>Design storm.</i> Adequate erosion control measures, structures, and devices shall be planned, designed, constructed and maintained so as to provide protection from the calculated maximum peak of runoff from the ten-year storm. Runoff rates shall be calculated using the procedures in the USDA, Natural Resource Conservation Service's (formerly Soil Conservation Service's) National Engineering Field Manual for Conservation Practices, or other acceptable calculation procedures including but not limited to the Charlotte-Mecklenburg Storm Water Design Manual</p> <p>OPTIONS:</p> <ol style="list-style-type: none"> 1. Leave as is. 2. Allow staff to require Erosion Control Measures for sites or specific measures on a site to be designed for 25-year storm if deemed necessary due to critical downstream areas, areas identified within watershed master plans or time of year of construction. 	<ul style="list-style-type: none"> • Maybe difficult for designer to determine if it will be required. • Open to judgment • May be cumbersome for staff to apply.

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7	Application & Exemptions of SW Ordinance	<p>Existing Asheville SW Ordinance: Application 7-12-5(3)</p> <p>Draft Ordinance: (I.)(G.), Prohibition and Exemptions [p. 5-6]</p>	<p>Existing Asheville Ordinance: (3) <i>Application.</i></p> <p>a. Except as otherwise provided herein, the provisions of this section 7-12-5 shall apply to all proposed developments within the city limits of the City of Asheville, which fit in any one of the following categories:</p> <ol style="list-style-type: none"> 1. All development having a proposed impervious surface on completion of the development of greater than 50 percent of the total acreage in the development. 2. Any development which is greater than five acres in size. <p>b. The following types of development are not subject to the requirements of this section 7-12-5:</p> <ol style="list-style-type: none"> 1. A lot which is in existence prior to the effective date of this chapter may be developed for single-family residential purposes without being subject to the restrictions of this section. 2. Expansions that increase the runoff to existing development must meet the requirements of this section, however, the built upon area of the existing development is not required to be included in the calculations. 3. Any subdivision which received preliminary plat approval prior to July 1, 1994. 	<ul style="list-style-type: none"> • Minimum requirement would be less restrictive than current in some cases.

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			<p>Draft Ordinance: Prohibition and Exemptions</p> <p>(i.) No person shall (1) develop any land, (2) engage in any industry or enterprise, (3) construct, operate, or maintain any landfill, hazardous waste treatment, disposal or recovery facility, or any other industrial or related facility (4) or dispose of any hazardous or toxic substance or other pollutant without having provided for compliance with this Ordinance and with any program, plan, permit, or regulation of the City of Asheville SWMP adopted in accordance with this Ordinance.</p> <p>ii.) Exemptions—The following activities are exempt from this Ordinance:</p> <p>(a.) Development that cumulatively disturbs less than one acre and is not part of a larger common plan of development or sale is exempt from the provisions of this Ordinance.</p> <p>(b.) Redevelopment that cumulatively disturbs less than one acre and is not part of a larger common plan of development or sale is exempt from the provisions of this Ordinance.</p> <p>(c.) Development and redevelopment that disturb less than one acre are not exempt if such activities are part of a larger common plan of development or sale, even though multiple, separate or distinct activities take place at different times on different schedules.</p> <p>(d.) Activities that are exempt from permit requirements of Section 404 of the Federal CWA, as specified in 40 CFR 302 (primarily, ongoing farming and forestry activities) are exempt from the provisions of this Ordinance.</p>	

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			<p>REQUIRED:</p> <p>1. Development and redevelopment that cumulatively disturbs one acre or more.</p> <p>OPTIONS:</p> <p>1. Minimum Requirement.</p> <p>2. Combination of proposed and existing.</p> <p>3. Include development and redevelopment with 50% or more total impervious surface on parcel, independent of disturbance amount, excluding 1-2 family home structures.</p> <p>4. Exempt redevelopment if disturbance is less than 1 Acre and reduction in impervious surface on parcel is achieved.</p>	

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8	“Post-Construction” Water <u>QUANTITY</u> Control	<p>Existing Asheville Stormwater (SW) Ordinance: 7-12-5.A.2 Policy [p.33]</p> <p>Draft Ordinance: IV.e.(ii.)(a) The minimum “post-construction” stormwater quantity control requirements shall accomplish the following...[p. 35];</p>	<p>Existing Asheville Ordinance: Manage after-development runoff from a 10-yr, 24-hr storm so that the on-site and off-site effects of development are the same or better than the pre-development state. Performance standards and design criteria set-forth in Stormwater Specifications Manual.</p> <p>Draft Ordinance: IV.e.(ii.)(a.): Install stormwater facilities to limit the 2-yr, 24-hr and 10-yr, 24-hr developed peak discharge rates to pre-development conditions using a SCS Type II design storm and pass the 100-yr, 24-hr storm event;</p> <p>OPTIONS FOR PEAK FLOW CONTROLS: 1. Base PEAK FLOW control requirements on type of development (residential or commercial) and % built upon area: <u>Residential</u> (> 6 – 24% built upon area, depending on watershed) perform a downstream analysis to see if peak control is needed for 10- through 100-yr, 6-hr storms OR control peak from 10- and 25-yr, 6-hr storm; <u>Commercial:</u> (> 6 – 24% built upon areas, depending on watershed) control 10-yr, 6-hr storm AND perform downstream analysis to determine whether additional peak flow is required for what level of storm up to 100-yr, 6-hr OR if downstream analysis is not performed, control the peak for both the 10- and 25-yr, 6-hr storms. (Charlotte Mecklenburg Post-Construction Ordinance) 2. PEAK FLOW requirements: > 12% built upon area, control 2- and 10-yr, 24-hr storm (Huntersville)</p>	<ul style="list-style-type: none"> • Peak and volume control probably need to be in concert and part of the regulation. • Volume control will prevent channel degradation and help prolong capacities of the downstream infrastructure • Volume control will approximately 10%-30% to storage volume requirements. Depending on Site Constraints. Approximately the same as peak shaving for the 25-year event.

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			<p>3. Require PEAK FLOW control (retention) for the 25-yr, 24-hr storm to provide over bank flood protection. This in conjunction with extended detention of the 1-yr 24-hr storm (see Option 3 for Volume Control, below) effectively controls smaller storm events such as the 2-through 10-yr events) (Georgia Stormwater Management Manual).</p> <p>4. Require PEAK FLOW control of 1-, 2- and 25-yr storms events (Chapel Hill).</p> <p>5. Require PEAK FLOW control of 2-, 5- and 10-yr storms events except on existing lots developed as 1 and 2 family homes.</p> <p>6. Allow staff to require control of 25-yr storm if by using existing watershed engineering analysis it is determined that downstream systems would fail due to 25-yr flows.</p> <p>OPTIONS FOR VOLUME CONTROL:</p> <p>1. Add design storm specific VOLUME control requirements based on % built upon area (> 6 – 24% depending on watershed: control entire volume for 1-yr, 24-hr storm on both residential and commercial sites. (Charlotte-Mecklenburg</p> <p>2. Add design storm specific VOLUME control requirements: for development with $\geq 5,000$ sq. ft. of built upon area, control increase in volume for 1-yr, 24-hr or 2-yr 24-hr storm, depending on zoning district (Huntersville).</p> <p>3. Provide VOLUME control: extended detention for the 1-yr, 24-hr storm to protect downstream channels (approximately equal to volume needed to control peak from 5- to 10-yr storm) (Georgia Stormwater Management Manual).</p> <p>4. Provide VOLUME control for 2-yr, 24-hr storm except at single family and 2-family dwelling lots (Chapel Hill).</p> <p>5. VOLUME control for greater storm event.</p>	

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9	"Post-Construction" Water <u>QUALITY</u> Control – Development Standards for <u>LOW</u> Density Projects	<p>Existing Asheville Ordinance: 7-12-5.A.2. Policy [p.33]</p> <p>Draft Ordinance: IV.b.(ii.) Development Standards for Low-Density Projects [p.25]</p>	<p>Existing Asheville Ordinance: The requirements of this section shall be construed consistently with any State or Federal Requirements for controlling storm water quality.</p> <p>Draft Ordinance:</p> <p>a. Stormwater shall be transported by vegetated conveyances to the MEP.</p> <p>b. On-site infiltration areas, bioretention areas and level spreaders may also be used as added controls.</p> <p>c. All built upon areas – 30-ft. buffer landward of all perennial and intermittent surface waters.</p> <p>Required: Same as Draft Ordinance</p> <p>OPTIONS:</p> <p>1. Make requirements the same as for High Density, see below, including OPTIONS selected.</p>	<ul style="list-style-type: none"> • If volume control is added may as well incorporate into water quality requirements in terms of a first flush capture rate. • MEP –Maximum Extent Possible is difficult to define and regulate

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10	"Post-Construction" Water <u>QUALITY</u> Control – Development Standards for <u>HIGH</u> Density Projects	<p>Existing Asheville Ordinance: 7-12-5.A.2. Policy [p.33]</p> <p>Draft Ordinance: IV.b.(ii.) Development Standards for High-Density Projects [p.26]</p>	<p>Existing Asheville Ordinance: The requirements of this section shall be construed consistently with any State or Federal Requirements for controlling storm water quality.</p> <p>Draft Ordinance:</p> <ul style="list-style-type: none"> a. Structural stormwater systems control and treat difference between pre and post runoff from 1-yr 24-hr storm. b. Runoff volume drawdown 24 – 120 hours. c. Discharge the storage volume at a rate less than or equal to the predevelopment rate of the 1-yr, 24-hr storm. d. Provide average annual 85% TSS removal e. All built-upon areas – 30-ft. buffer landward of all perennial and intermittent surface waters. <p>Required: Same as Draft Ordinance</p> <p>OPTIONS:</p> <ul style="list-style-type: none"> 1. Increase minimum drawdown time to 48-hours per 2006 changes to guide lines 2. Require control and treatment of the volume generated by the 1st 1 inch of precipitation, with removal of 85% TSS, per 2006 changes to guide lines. 3. Increased no-build buffer. 	

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11	Regional Stormwater Management Facilities	<p>Existing Asheville Ordinance: Not addressed.</p> <p>Draft Ordinance: VII.d. Regional Controls for Quantity and Quality [p.46]</p>	<p>Existing Asheville Ordinance: Not addressed.</p> <p>Draft Ordinance: Provide provisions for participating in a regional stormwater management facility in lieu of runoff control so that there is greater flexibility to allow development to use approaches that might be a better fit for the project site such as:</p> <ul style="list-style-type: none"> • Site drains to an approved existing or proposed (within 2 years) public regional facility; • Participation is in form of fee in lieu, land construction work on a facility or combination values of these; • Stormwater Management Plan is in compliance with the Stormwater Ordinance • Watershed Management Plan is in compliance with the Stormwater Ordinance <p>OPTIONS: No additional options.</p>	<ul style="list-style-type: none"> • We will need a fee in lieu of for regional systems to be supported. • These will eliminate maintenance of multiple structures in a basin. • Depending on location of project it may be beneficial for flooding and other issues to pass the run-off to regional location.

